

Amendments to the Claims

1. (Currently amended) An ETC (electronic toll collection) system comprising:
an antenna having a predetermined directivity for providing a limited radio-communication service zone of which length along a lane is set to a distance which allows only a single vehicle to be present in the service zone;

a single vehicle sensor positioned at a location closer to oncoming vehicles than said antenna by a predetermined interval for detecting a vehicle which reaches a predetermined position in the limited radio-communication service zone, the predetermined position being defined by the location of the vehicle sensor;

first means for continuously transmitting a radio signal via the antenna independently of whether or not the vehicle sensor detects the vehicle;

second means for deciding whether or not a radio response to the radio signal is received via the antenna;

third means for, in cases where the second means decides that a radio response to the radio signal is received, judging that there is an ETC vehicle coming into the limited radio-communication service zone; and

fourth means for, in cases where the vehicle sensor detects a vehicle while the second means decides that a radio response to the radio signal is not received, judging that there is a non-ETC vehicle coming into the limited radio-communication service zone.

2. (Canceled)

3. (Currently amended) An ETC system as recited in claim 1, wherein the distance of the limited radio-communication service zone ~~has a length~~ is greater than a length of the vehicle and smaller than twice the length of said vehicle.

4. (Currently amended) An ETC system as recited in claim 1, wherein the length of the limited radio-communication service zone ~~has a length of~~ is about 6.5 m along a the lane.

5. (Canceled)

6. (Currently amended) An ETC (Electronic Toll Collection) system, comprising:

an antenna having a predetermined directivity for providing a limited radio-communication service zone of which length along a lane is set to a distance which allows only a single vehicle to be present in the service zone;

a single vehicle sensor positioned at a location closer to oncoming vehicles than said antenna by a predetermined interval for detecting whether a vehicle has reached a predetermined position in said limited radio-communication zone, the predetermined position being defined by the location of the vehicle sensor;

transceiver means working cooperatively with said antenna for continuously transmitting a radio signal at a given rating level to cover the limited radio-communication service zone independently of whether or not the vehicle sensor detects a vehicle and for detecting a radio response to said radio signal from each vehicle detected by said vehicle sensor within said radio-communication service zone; and

processor means for deciding a vehicle that has been detected by said vehicle sensor in said radio-communication service zone is a non-ETC vehicle if no radio response to said radio signal is detected from said vehicle.

7. (Previously presented) An ETC system of claim 6, wherein said processor means decides a vehicle that has been detected by said vehicle sensor in said radio-communication zone is an ETC vehicle if a radio response to said radio signal is detected from said vehicle.

8. (Previously presented) An ETC system as recited in claim 1, wherein the antenna is one in number.

9. (Previously presented) An ETC system as recited in claim 1, wherein the antenna comprises a matrix array of antenna elements.

10. (Previously presented) An ETC system as recited in claim 6, wherein the antenna comprises a matrix array of antenna elements.
11. (New) An ETC system as recited in claim 3, wherein the distance of the limited radio-communication service zone is about 6.5 m along the lane.
12. (New) An ETC system as recited in claim 6, wherein the distance of the limited radio-communication service zone is greater than a length of the vehicle and smaller than twice the length of said vehicle.